**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, D.C. 20554**

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| In the Matter of | ) | |
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| Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands | ) | WT Docket No. 03-66<br>RM-10586 |
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| Part 1 of the Commission's Rules – Further Competitive Bidding Procedures | ) | WT Docket No. 03-67 |
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| Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions | ) | MM Docket No. 97-217 |
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| Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico | ) | WT Docket No. 02-68<br>RM-9718 |

To: The Commission

## COMMENTS OF FIXED WIRELESS HOLDINGS LLC

Fixed Wireless Holdings LLC ("FWH") submits these comments in response to the notice of proposed rulemaking in the above-captioned proceeding.[1] As an active participant in the broadband fixed services and equipment market, FWH fully supports the Commission's

[1] *See Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Notice of Proposed Rulemaking and Memorandum Opinion and Order, 18 FCC Rcd 6722 (2003) ("*MDS/ITFS NPRM*").

initiative to reform its service and licensing rules governing multichannel multipoint distribution services ("MDS") and instructional television fixed services ("ITFS") in the 2500-2690 MHz band ("MDS/ITFS band") to support the provision of next-generation high-speed fixed services to all areas of the United States, particularly rural and underserved communities that have few or no broadband options. FWH urges the Commission to adopt reasonably tailored rules that protect the predominant fixed use of the MDS/ITFS band, and encourage deployment of spectrally efficient systems in the band.

## I. THE COMMISSION SHOULD ADOPT RULES THAT FACILITATE DIGITAL, BROADBAND FIXED SERVICES

The MDS/ITFS band offers the best opportunity for fixed wireless operators to deliver last-mile, high-speed Internet services to rural America.[2] In fact, MDS and ITFS licensees may be the only current providers of broadband services to many rural and underserved markets.[3] The MDS/ITFS band also shows perhaps the best promise for introducing effective broadband competition to the vast majority of markets that are dominated by DSL/cable modem duopolies.[4]

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[2] Fixed wireless providers have used alternative frequency bands such as the wireless communications service ("WCS") band at 2305-2320 and 2345-2360 MHz; the local multipoint distribution service ("LMDS") band at 27.5-28.35 GHz, 29.1-29.25 GHz, and 31-31.3 GHz; the 24 GHz band; the 39 GHz band; and the unlicensed service bands. *See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Eighth Report, 18 FCC Rcd 14783, App. A, A-1 (2003) ("*Eighth CMRS Report*"). These bands, however, do not offer many of the advantages of the MDS/ITFS band for the provision of fixed wireless services. For example, fixed wireless systems in the 24 GHz, 39 GHz, and LMDS bands experience significant signal strength losses as a result of atmospheric conditions and therefore have a service radius of only two to five miles for a given transmitter. *Id.* at App. A, A-2. In contrast, MDS/ITFS and other fixed wireless systems operating at frequencies below 6 GHz have a service radius of five to 35 miles for a given transmitter, depending on the particular frequency band, transmitter power, and terrain. *Id.* Moreover, fixed wireless systems in the WCS bands are limited to 30 MHz of spectrum.

[3] *See Amendment of Part 2 of the Commission Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advances Wireless Services, including Third Generation Wireless Services*, First Report and Order and Memorandum Opinion and Order, 16 FCC Rcd 17222, 17229 ¶ 14 (2001) ("*3G First R&O*") (citing Sprint Comments at 13).

[4] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, Third Report, 17 FCC Rcd 2844, 2874-75 ¶¶ 72, 75 (2002) ("*Advanced Services Third Report*").

Although MDS and ITFS services began in the 1960s and 1970s as one-way video delivery services provided over high-power fixed systems, the industry in recent years has been under increasing market and technological pressure to re-focus its services to provide two-way, digital broadband services using low-power, cellular-type systems.[5] Unlike high-power systems, low-power, cellular-type systems do not require direct line-of-sight between the subscriber's antenna and the operator's transmission facilities, and therefore can provide broadband fixed services to a large number of subscribers at a relatively low cost.[6] The primary obstacle to the full deployment of broadband fixed services in the MDS/ITFS band, however, has been the lack of service and technical rules to accommodate next-generation, low-power, cellular-type systems.[7] The Commission can remove this obstacle by adopting reasonably tailored rules to protect and promote the development of low-power MDS and ITFS systems that can offer digital broadband fixed services.

As the Commission acknowledged, the MDS industry has invested billions of dollars to develop broadband fixed services in the MDS/ITFS band.[8] The Commission effectively accorded preferred status to those fixed services in the event that mobile or other services are introduced into the band. Specifically, when the Commission added a mobile allocation to the MDS/ITFS band in 2001 to provide for additional flexible use of the spectrum, it emphasized that "if fixed and mobile sharing of the band continues to be infeasible in the long run, our

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[5] *See MDS/ITFS NPRM*, 18 FCC Rcd at 6726-28, 6735-36 ¶¶ 7, 9, 25-28; Coalition Proposal at 1-4.

[6] *See MDS/ITFS NPRM*, 18 FCC Rcd at 6735 ¶ 26; Coalition Proposal at 4-7.

[7] *See MDS/ITFS NPRM*, 18 FCC Rcd at 6735 ¶ 26; Coalition Proposal at 7-10; *Advanced Services Third Report*, 17 FCC Rcd at 2875 ¶ 73.

[8] *See* FCC Staff Report issued by the Office of Engineering and Technology, Mass Media Bureau, Wireless Telecommunications Bureau, and International Bureau, *Spectrum Study of the 2500-2690 MHz Band: The Potential for Accommodating Third Generation Mobile Systems*, Final Report, ET Docket No. 00-258, rel. Mar. 30, 2001 ("*FCC Final Report*").

service rules would ensure the protection of *fixed* operations."[9] Fixed services must be protected from interference by new mobile services in the MDS/ITFS band if consumers are to enjoy the same robust competition in the fixed wireless market that has long existed in the mobile wireless market.

## II. THE MDS/ITFS BAND SHOULD BE SEGMENTED TO SUPPORT BOTH TDD AND FDD TECHNOLOGIES

Both time division duplex ("TDD") and frequency division duplex ("FDD") systems offer unique and important benefits for broadband fixed services. For example, TDD systems permit signal transmissions in both directions on the same frequency, but at different times. Because this transmission method efficiently matches the manner in which data is sent and received, TDD systems are particularly well-suited for high-speed, asymmetric data services. FDD systems, on the other hand, use separate channels for uplink and downlink transmissions. Because FDD systems permit simultaneous transmissions in both directions, they are well-suited for voice traffic, which has relatively constant bandwidth requirements in both directions.

As the Coalition acknowledged, however, the co-existence of both TDD and FDD systems on the same frequencies "creates a heightened risk of co[-]channel interference."[10] Although the Coalition dismissed this serious interference problem as "the price that must he [sic] paid to accommodate FDD and TDD technologies in the same band,"[11] it overlooks the obvious, simple solution of providing discrete segments for TDD and FDD operations.

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[9] *See 3G First R&O,* 16 FCC Rcd at 17238 ¶ 30 (emphasis added).

[10] *See* Wireless Communications Association International, Inc., National ITFS Association, and Catholic Television Network, *A Proposal for Revising the MDS and ITFS Regulatory Regime,* RM-10586 at 28 (filed Oct. 7, 2002) (*"Coalition Proposal"*).

[11] *Id.*

Only last year, the Commission recognized the importance of achieving technological neutrality by establishing a band plan for the lower 700 MHz services that provided for both paired spectrum blocks suitable for FDD operations and unpaired spectrum blocks suitable for TDD operations.[12] Technological neutrality requires the Commission to adopt the same approach for the MDS/ITFS band.

Accordingly, rather than adopt the Coalition's unduly complex and spectrally inefficient band plan,[13] the Commission should establish a more streamlined band plan that adequately protects fixed services, promotes spectrally efficient systems, and ensures technological neutrality. Specifically, to support the development of spectrally efficient broadband fixed systems using either TDD and FDD technologies, the Commission should segment the MDS/ITFS band to provide for two blocks of FDD spectrum, separated by a block of TDD spectrum. Each of the two FDD spectrum blocks would consist of eight channels (for a total of 16 FDD channels).[14] Both FDD spectrum blocks would occupy the lower and upper portion of the MDS/ITFS band. The TDD spectrum block would consist of 16 channels that are each 6-MHz wide and would occupy the middle portion of the MDS/ITFS band. This band segmentation would fairly accommodate both TDD and FDD systems by reserving an equal amount of spectrum for each type of system. As discussed in Section III below, TDD and FDD

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[12] *See Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59)*, Report and Order, 17 FCC Rcd 1022, 1053-54, 1056-57 ¶¶ 76, 84 (2001) ("*Lower 700 MHz Order*").

[13] The Coalition band plan proposes to divide the MDS/ITFS band into three spectrum blocks. Two of those blocks in the lower and upper portions of the band would be reserved for low-power systems, and the middle block would be reserved for high-power systems. This band plan would reserve a substantial block of spectrum—42 MHz—for spectrally inefficient high-power systems that otherwise could convert to low-power operations. It also establishes wide guard bands that otherwise could be used for full-service operations. *See MDS/ITFS NPRM*, 18 FCC Rcd at 6745, 6747 ¶¶ 50, 55.

[14] 15 of the 16 FDD channels would be 6 MHz-wide. The remaining FDD channel at 2686-2690 MHz would be 4 MHz-wide.

operations on these channels should be subject to reduced signal strength limits and other technical limits, thus avoiding the need to reserve a substantial portion of the MDS/ITFS band for high-power systems.

## III. REDUCED SIGNAL STRENGTH LIMITS AND OTHER TECHNICAL LIMITS WILL SPUR DEPLOYMENT OF SPECTRALLY EFFICIENT, LOW-POWER FIXED WIRELESS SYSTEMS

The incompatibility between high-power systems and low-power, cellular-type systems sharing the same MDS/ITFS frequencies is undisputed.[15] The Commission can resolve this issue by adopting an across-the-board reduction of signal strength limits, along with appropriate emission limits and other interference protection requirements, that would apply to all MDS and ITFS systems in the band after a limited transition period. These technical limits are necessary to protect low-power, fixed wireless systems from continued operation of less efficient, high-power analog systems. Moreover, adopting these limits would be more consistent with the approach that the Commission has taken with respect to other service bands that also are allocated for flexible use.[16] For example, the Commission determined that signal strength limits for flexible services in the lower and upper 700 MHz bands would allow licensees "to provide effective service within their authorized geographic area, while minimizing co-channel interference to co-channel licensees in adjacent areas."[17]

As the Commission has noted, a substantial number of MDS and ITFS operators already are seeking to implement or convert to low-power, cellular-type systems because "they are more spectrally efficient than high-powered systems, can support provision of high-data-rate services

[15] *Id.* at 6743 ¶¶ 44-45.

[16] *See, e.g., Lower 700 MHz Order*,17 FCC Rcd at 1063-64, 1068-69, 1069-70 ¶¶ 102, 119, 122.

[17] *Id.*

to a large number of subscribers, can help overcome obstacles to line-of-sight service, and can more readily support mobile or portable services."[18] Adopting reduced signal strength limits and other technical limits thus will facilitate the market-driven evolution of MDS and ITFS systems.

MDS and ITFS incumbents should have a limited transition period to conform their systems to the new band plan and service rules. They also should be required to bear their own costs of conversion. This requirement should have minimal impact on many incumbents who otherwise would have converted to low-power, cellular-type systems in response to market demand. Alternatively, those that choose not to convert their systems have the option of selling their licenses in the secondary market. In either event, MDS and ITFS incumbents will not be forced to relinquish their licenses, provided that they remain in compliance with the Commission's rules.

## IV. CONCLUSION

Based on the foregoing, FWH urges the Commission to adopt a regulatory framework that adequately protects and promotes next-generation fixed broadband services in the MDS/ITFS band.

Respectfully submitted,

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[18] *See MDS/ITFS NPRM*, 18 FCC Rcd at 6735 ¶ 26.

## CERTIFICATE OF SERVICE

I, Caitlin A. Coyle, hereby certify that a copy of the foregoing **COMMENTS** has been served this 8th day of September 2003 via electronic mail on the following:

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